

No. 12,083

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

CUTTER LABORATORIES, INC.,

Appellant,

vs.

LYOPHILE-CRYOCHEM CORPORATION, ESSDEE PATENTS,
INC., and TABOR-OLNEY CORPORATION,

Appellees.

APPELLANT'S PETITION FOR REHEARING.

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FILED

JAN 26 1950

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Appellees.

APPELLANT'S PETITION FOR REHEARING.

Now comes Cutter Laboratories, Inc., appellant herein, and petitions the Court for a rehearing in this cause.

In its decision affirming the judgment of the lower court as to claims 11, 12 and 13 of Reichel Reissue Patent No. Re. 20,969, this Court held that penicillin, the product constituting 79% of appellant's allegedly infringing sales, was not frozen quickly or substantially instantaneously, as required by the claims. Nevertheless, this Court held that appellant has substituted an equivalent step, slow freezing, and thus infringed upon the claims. Prior to this holding the question of possible equivalency of appellant's slow freezing to the quick or substantially instantaneous freez-

ing of the patent had not been considered either by appellant or appellees, and had been mentioned neither in the briefs preceding the hearing nor at the hearing itself. Indeed, to appellant's argument in its opening brief that quick or substantially instantaneous freezing in the patent claims, as interpreted by the description and by the evidence in the case, did not cover appellant's processes, appellee urged only that the jury below had decided appellant's processes to be quick or instantaneous freezing, and that the jury verdict could not be upset by this Court. The question of the applicability of the doctrine of equivalents to appellant's freezing methods having entered this appeal for the first time in the opinion of this Court, appellant respectfully submits that it should be given opportunity to argue the question upon rehearing.

Further, it is submitted that this Court based its consideration of plaintiffs' argument that claims 4 and 5 of Flosdorf, *et al.*, Patent No. 2,345,548 are invalid as claiming a result or function upon a misconception of the nature of such argument. Appellant does not contend that the invention in this patent lies in new types of pumps, but rather that, conceding the invention in these claims to lie in the concept of combining certain pumps with apparatus for desiccating frozen biological products, the patentees failed to claim the combination they were entitled to patent and instead claimed the function or result of this combination.

The grounds, therefore, of this Petition are:

(1) The specifications and teachings of the Reichel patent make quick or substantially instantaneous freezing mandatory in the Reichel process and fail to provide any basis whatsoever for an application of the doctrine of equivalents, which reads out of the express language of the claims that which differentiates appellant's processes from the patented process.

(2) Even if the doctrine of equivalents could in this case operate to ignore the express limitation of the claims, the existence of such equivalency must be proven.

(3) No scintilla of proof exists that appellant's slow freezing either accomplishes the result of the quick or instantaneous freezing of the patent, or accomplishes said result in the same or substantially the same way; on the contrary, the evidence shows that appellant's slow freezing does not produce the result taught in the Reichel patent.

(4) The holding of this Court that the validity of claims 4 and 5 of the Flosdorf, *et al.* patent lies in the fact of combination, rather than the novelty of any particular element, still compels the conclusion that said claims are invalid as failing to claim the combination and instead claim the result of function of said combination.

I.

The Specifications and Teachings of the Reichel Patent Make Quick or Substantially Instantaneous Freezing Mandatory in the Reichel Process and Fail to Provide Any Basis Whatsoever for an Application of the Doctrine of Equivalents, Which Reads Out of the Express Language of the Claims That Which Differentiates Appellant's Processes From the Patented Process.

The Reichel patent in suit consists of one page of drawings, three pages of description and thirteen claims. This Court has held valid and infringed claims 11, 12 and 13 of the patent, which specify substantially instantaneous or quick freezing as the original step of appellees' process. The patentee's description of his invention commences with the usual statements relative to the difficulties occasioned by prior workers in the field and the broad observation that the patentee's invention overcomes these objections. Thereafter, the patentee in his statement of invention commencing on page 1, col. 2, line 17, of the patent states unequivocally that:

"According to the present invention, the serum or other biological product is transformed from the liquid to the completely frozen solid state by substantially instantaneous freezing of the liquid by indirect contact with a freezing agent such as liquid air, dry ice (solidified carbon dioxide) or other low temperature refrigerant or freezing mixture and by subliming the ice from the frozen mixture while preventing melting thereof, while maintaining a high vacuum, the frozen water being removed from the frozen material without melting or softening the material."

The patentee then goes on to say:

“The substantially instantaneous freezing of the serum or other liquid biologically active product is advantageously carried out by placing the liquid material in a container, such as a spherical glass flask or metal cylinder and then freezing the material quickly, solidly and completely on the inside of the container, preferably in the form of a thin layer on the inner surface of the container, by immersing the container in a freezing mixture at a temperature far below the freezing point of the material or by spraying the charged container with the cooling substance, using such cooling substances as liquid air, dry ice, or other freezing mixture at a temperature far below the freezing point of the material.

“In order to insure quick and substantially instantaneous and complete freezing it may be necessary or desirable to add the liquid material to the chamber or container by installments and to allow the material to freeze solidly in the form of layers on the inside of the chamber. When a layer of the material is thus frozen in a substantially instantaneous manner to a temperature far below the freezing point, the addition of a further amount of the material will result in its substantially instantaneous freezing by coming in contact with the already frozen layer of material at such a low temperature, and by the further cooling action of the liquid air or other refrigerant in contact with the outside of the container.”

The patentee then goes on to describe how the frozen serum, which again he states to have been frozen in a substantially instantaneous manner, is placed within a chamber or container which is connected with a high vacuum pump, how vacuum is employed to sublime the ice from

the serum, how the chamber may be warmed to increase the rate of evaporation, and how, when the frozen water has been completely or almost evaporated, the charged chamber and its contents take on the temperature of the surrounding atmosphere. Commencing on page 2, col. 1, line 53, of the patent, the patentee again refers to the instantaneous freezing, stating:

“As a result of this treatment of the serum or similar biological product there are avoided or prevented any apparent physical or biological changes in the substance which is instantaneously frozen and lyophilized while maintained in its frozen state, and as a result there is obtained a final product which has not been deteriorated by treatment in a liquid state while the water is being removed therefrom. By transforming the liquid substance quickly and completely into a frozen solid state, the component parts of the colloidal system are permanently fixed and changes are prevented in the chemical equilibrium such as would occur at the surface in the dehydration of a liquid product, and such as frequently results in the formation of polymers or anhydrides of the protein or other constituents. It is well known that when such surface films occur, in the evaporation of aqueous materials such as sera, they possess different properties from the rest of the proteins as is shown by their marked insolubility.”

After another general reference to the results of his process, the patentee again refers at page 2, col. 2, line 8, to his manner of freezing, stating:

“The rapid freezing of the serum or similar material and the removal of the frozen water from the frozen solid material leaves the organic residue of the

material in a porous and sponge-like condition, with the structure of the colloidal particles apparently unchanged.”

Thereafter, the patentee discusses at some length the properties of the product obtained by his process and their advantages, and then proceeds to describe apparatus for carrying out the process, noting at page 3, col. 1, line 29, of the patent that

“The refrigerant may be a freezing mixture such as dry ice, dry ice and acetone, liquid air, etc.”

(The Court will note that these substances are substances of extremely low temperature, the warmest being dry ice, which is normally at a temperature of approximately $-70^{\circ}\text{C}.$)

Following this, and commencing on page 3, col. 1, line 41, of the patent, the patentee states:

“In the carrying out of the process a small amount of the serum or other material may be placed in the container 1 and this container then immersed in liquid air or other refrigerant which will bring about rapid and substantially instantaneous freezing of the material and reduction of its temperature far below its freezing point. The addition of further amounts of the liquid material combined with further refrigeration will result in the forming of successive layers of rapidly frozen material until a proper charge of frozen material is contained therein. The material 2 is shown as forming a thick layer on the walls of the container such as results where successive amounts of liquid are added and the container rotated so that successive layers of the material are frozen. In a flask of 50 liters capacity the charge may be, for

example, thirty liters of material which is thus frozen to a solid state in the manner above described. In a flask of 20 inches diameter the layer of frozen material may be for example about 4 inches in thickness on the inside wall of the container.

“When the container has thus been charged with the frozen material, which is frozen to a temperature far below the normal freezing temperature, it is connected with the condenser and the air is exhausted and a high vacuum applied.”

Thereafter, the patentee describes the remainder of his process, stating that the material is maintained in a solid frozen state until the ice has been evaporated or sublimed therefrom, whereupon the container and its charge gradually take on the temperature of the surroundings until the substance attains a temperature substantially above 0°C. The patentee observes that this later has the important advantage of promoting the removal of residual water still present in the product after the ice has been sublimed therefrom, and giving a final product of improved stability, keeping properties and resistance to deterioration. Immediately after this, the patentee at page 3, col. 2, line 26, states:

“The rapid freezing of the serum or other material retains the structure of the colloid particles and constitutes and prevents change in concentration or degree of dispersion in water such as would occur in the evaporation of the materials in a liquid state. Apparently the rapid freezing of the liquid material results in a substantially complete and permanent fixing of the constituents, including colloidal constituents and inorganic salts, in the state and relative relations

in which they exist in the fresh liquid material, such that, when the resulting lyophilic products are subsequently treated with fresh water they reassume practically their original state and reproduce a serum or other liquid biological product having the same or practically the same physical and biological properties as the fresh material."

Thereafter, the patentee again discusses briefly the advantages of his process and proceeds to make his patent claims.

It will be noted by this Court, therefore, that the patentee, in addition to expressly limiting his claims to quickly or substantially instantaneously freezing, has in his statement of invention and in his description of his process referred to such freezing in unequivocal terms as consisting of an extremely important part of his process and invention, and indeed the important part thereof. While the patentee briefly refers to the taking on of a higher temperature by the freeze drying product at the end of the process in but two portions of his patent description, said description is replete with references to original instantaneous freezing, its advantages, its means of application, and its function. It is submitted that no fair reading of this patent document can lead to any conclusion but that the document purports to patent quickly or substantially instantaneous freezing as a necessary and essential step in the patented process, if not the essential step thereof, and it is submitted that in applying the doctrine of equivalents to hold that this patent is not a patent for quickly or instantaneously freezing but, on the contrary, is a patent covering a process including any kind of freez-

ing, this Court has committed serious error in view of the following legal principles covering patent construction and the effect of the patent grant.

As this Court recognizes in its opinion, no limitation which a patentee puts into his claims may be ignored and omission of a claim limitation by the alleged infringer will result in a holding of non-infringement. This is in consequence of the firmly established policy that a patentee will be limited to the precise terms of his grant that the public may know that which it may do and that which it may not do. *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 274, 24 L. Ed. 344; *Fay v. Cordesman*, 109 U. S. 408, 27 L. Ed. 979; *McClain v. Ortmyer*, 141 U. S. 419, 35 L. Ed. 800.

Further in ascertaining those limits of the patent grant, it is well settled that recourse must necessarily be had to the entire patent document, that is, not merely to the claims but also to the description. Otherwise, the protection to the public which the patent as a definitive document affords would be lost. *Hogg v. Emerson*, 47 U. S. 437, 12 L. Ed. 505; *Greenawalt v. American Smelting & Refining Co.*, 10 F. 2d 98 (9 Cir.); *Haynes Stellite Co. v. Osage Metal Co., Inc.*, 110 F. 2d 11 (10 Cir.).

Of course, as this Court has recognized and as is pointed out in the decisions cited by this Court in its opinion, strict literal interpretation of restrictive claim language is not always adhered to and where possible, in order to afford the patentee the protection to which he is entitled, resort is had to the doctrine of equivalents. This, this Court has purported to do in the instant case, but it is submitted that in so doing, this Court has ignored the whole purport and

intent of the Reichel patent description, has disregarded the meaning of the Reichel patent as a contractual document, has lost sight of the public interest involved, and has, in fact, done precisely that which is condemned unequivocally in the *Keystone Bridge Co. v. Phoenix Iron Co.* and *Fay v. Cordesman* cases, *supra*.

While it is true that the doctrine of equivalents may be resorted to in the proper case, it is not true that the doctrine may be applied indiscriminately wherever a Court may feel that while the patentee has made a meritorious invention he has failed to patent it. It is submitted to be the law, on the contrary, that the principle of equivalents can only apply where the patent document as a whole provides a basis for and supports a claim of monopoly sufficient to cover the alleged equivalents.

Thus, as early as the case of *Snow v. Lakeshore and Michigan Southern Railway Co.*, 121 U. S. 617, 30 L. Ed. 1004, the Supreme Court, in considering the allowable scope of a patent claim, referred to the description of the patent, observed that there was nothing in the description indicative that the patentee contemplated any alternative other than the precise arrangement described, and held that, therefore, the claim must be restricted to precisely that which was shown in the description.

In *White, et al. v. Dunbar, et al.*, 119 U. S. 47, 30 L. Ed. 303, the Supreme Court in considering a reissue patent granted upon an application filed five years after issuance of the original patent held the reissue claims invalid, as broader than those of the original, because in the specifications of the original patent such limited and restrictive language was used as to provide no basis for

the broader claims of the reissue. Had a range of equivalents been permissible to the original claims, which would include the scope of the reissue claims, it is, of course, obvious that the reissue would not have constituted a broadening of the original patent.

Further, in *U. S. Industrial Chemicals, Inc. v. Carbide and Carbon Chemicals Corp.*, 315 U. S. 668, 86 L. Ed. 1105, the Supreme Court held a reissue patent invalid as failing to be for the same invention as was the original patent, merely because the claims of the original patent and the disclosure of the original patent, which set forth a process for mixing dry oxygen and water and steam and ethylene in the presence of a catalyst to produce ethylene oxide, would not support the reissue, the claims of which omitted the adding of water or steam. It was proven that the introduction of the water was not essential to the process, but the Court held that if this were so, it should have been set forth in the original patent. Here the Court did not even consider whether the step of adding dry oxygen was equivalent to the step of adding wet oxygen, *i. e.*, oxygen and water or steam, which the evidence showed produced the same result, and held the patentee to the restrictive terms of his original specification.

And in *Lakerwood Engineering Co. v. Stein*, 8 F. 2d 713 (6 Cir.), the Court of Appeals for the Sixth Circuit squarely held that since the description of the patent was restricted and provided no basis for a broadening of the claim by resort to the doctrine of equivalents, the patentee must be limited to the literal terms of his claim. The same rule was applied by the Court of Appeals for the Seventh

Circuit in *Staudé v. Bendix Products Corporation, et al.*, 110 F. 2d 484 (7 Cir.).

These cases and the cases cited above, which hold that the application of patent claims to alleged infringements must depend upon a construction of those claims in the light of the patent document as a whole, show clearly that no latitude will be allowed the patentee which is not consistent with his statement and description of his invention as it appears in the patent. Appellant has found no cases holding otherwise and those cases cited by this Court in its opinion and which purport to apply the doctrine of equivalents to relieve the patentee from the strict literal language of his claim terminology are entirely in accord with the foregoing principles.

Thus, in *Pedersen v. Dundon*, 220 Fed. 309 (9 Cir.), this Court stated that it would not refuse the patentee the doctrine of equivalents, but made special reference to the absence of any expressed intention by the patentee to limit his invention to a precise form. In *Claude Neon Lights v. E. Machlett & Son*, 36 F. 2d 574 (2 Cir.), Judge Hand, in holding the patentee strictly to the terms of his claims stated:

“Furthermore and quite independently, the disclosure emphasizes the necessity that the neon shall be pure, a requirement which pervades the whole, and was the basis of much of the argument by which he prevailed before, especially in distinguishing between spectral and commercial tubes. It is not disputed that in operation the caesium vaporizes, for the mirror, *qua* mirror, has no part in the circuit. The

defendant has here too abandoned the disclosure by the deliberate introduction of an 'impurity,' which in some curious way hangs about the cathode and does not infect the positive column at all." (P. 576.)

In *Otis Elevator Co. v. Atlantic Elevator Co., Inc.*, 47 F. 2d 545 (2 Cir.), before considering whether the defendant's device might fall within the allowable scope of equivalents of the patent claims, the Court stated:

"The specifications, however, did not declare that an auxiliary winding was essential to the invention." (P. 545.)

In *Keith v. Charles E. Hires Co.*, 116 F. 2d 46 (2 Cir.), there was no discussion of the scope of the disclosure of the patents involved.

This Court in its opinion lays much emphasis upon the fact that the novelty in the claims in issue is found in other steps of the claims, and that freezing as limited by the patentee did not constitute the essence of his invention. Whereas in the proper case this fact may often justify a more liberal application of the doctrine of equivalents, it is submitted that it in nowise removes the instant case from the scope of the principles set forth above. For example, the inventive contribution in *U. S. Industrial Chemicals, Inc. v. Carbide and Carbon Chemicals Corporation*, *supra*, lay in combining oxygen and ethylene in a heated reaction chamber in the presence of a catalyzer in order to produce the ethylene oxide. This, as it turned out later, was the essence of the invention, not the addition or omission of water. But regardless of this, the Supreme Court construed the original patent to be limited to the water addition step.

Considering the Reichel patent as a whole, as is required by the principles set forth above, it is obvious that the inclusion of quick or substantially instantaneous freezing was no accident, but rather defined the Reichel process as Reichel conceived it and as Reichel held the process up to the public in his patent document. Indeed, even the file wrapper, were it pertinent, is replete with the patentee's arguments to the effect that slow freezing, such as is used by appellant, and rapid freezing, such as is taught by Reichel, are entirely dissimilar things. As observed by this Court in its opinion, the statement in such file wrapper that the applicant considered himself entitled to a claim for continuing the application of the high vacuum until the material within the container reached a temperature substantially above $0^{\circ}\text{C}.$, irrespective of whether the material was initially frozen at $-20^{\circ}\text{C}.$ or $-70^{\circ}\text{C}.$, cannot be used to expand the scope of the Reichel claims. But even the file wrapper shows conclusively that the freezing limitations in claims 11, 12 and 13 were far from accidental. The limitation of quickly or substantially instantaneously freezing was in the claims from their introduction into the case. The limitation was in the claims at the time of the file wrapper statement above-referred to. It was in the claims when the patent was granted, was in the claims during the prosecution of the reissue patent, and remained in the claims when the patent in fact did reissue. *Philadelphia Rubber Works Co. v. Portage Rubber Co.*, 241 Fed. 108 (6 Cir.).

Since the public is entitled to the protection afforded by the definitive patent document, since the claims of the Reichel patent are expressly limited to quick or instan-

taneous freezing, and since this limitation is shown by the patent description to be intentional and restrictive, the patent may not be extended in scope to cover processes which do not respond to the limitation. While the doctrine of equivalents may be invoked to prevent a mere colorable evasion of the patent, where it appears from the patent description itself that the patentee has put the public on notice that his invention is of a certain scope, no justification exists for expanding the patent to cover that which it does not purport to cover. Merely because it may subsequently turn out that the patentee's real contribution has lurked some place in the claim other than in the step at which a competitor has departed from the patented process, the patent may not be something other than it purports on its face to be and may not cover something different than the patentee had agreed himself entitled to patent in his contract with the public. To hold otherwise is to ignore the patent as the definitive document circumscribing the patentee's rights and warning the public of what it may do and may not do.

In the instant case, as has hereinbefore been shown, any fair reading of the Reichel patent would lead the public to the conclusion that Reichel's patented process is one for freeze drying wherein the original freezing is quick or substantially instantaneous. Appellant was entitled to rely upon this plain showing in the patent, and should not be permitted to be trapped by an exercise of the doctrine of equivalents which extends appellees' monopoly not to what was patented but to that which turns out to be Reichel's principal contribution thirteen years after the grant of his original patent.

II.

Even if the Doctrine of Equivalents Could in This Case Operate to Ignore the Express Limitation of the Claims, the Existence of Such Equivalency Must Be Proven.

Appellant has shown how in accordance with well established principles of patent law, no scope can be afforded the Reichel patent which departs from the plain meaning and import of the patent document as such. But even were appellees entitled to invoke the doctrine of equivalents, its proper application to appellant's processes demands that the actual existence of equivalency be proven. Such proof is absolutely lacking in the instant case and, indeed, the evidence shows clearly that no equivalency in fact exists between appellant's slow freezing and the quick or instantaneous freezing of claims 11, 12 and 13 of the Reichel patent.

It is elementary law that the burden of proving infringement, if denied, is upon the party seeking to enforce its patent. *Fuller v. Yentzer*, 94 U. S. 299, 24 L. Ed. 107; *Bates v. Coe*, 98 U. S. 31, 25 L. Ed. 68; *Western Well Works v. Layne & Bowler Corporation*, 276 Fed. 465 (9 Cir.)

In this case the Court has held that appellant's processes are an infringement of claims 11, 12 and 13 of appellees' patent. To do this the Court has held that 79% of appellant's products were not frozen by quick or substantially instantaneous freezing as required by these patent claims

but nevertheless that appellant's slow freezing is the equivalent of the quick and instantaneous freezing of the patent. It is appellant's contention that such equivalency has not been proven and indeed that the record shows clearly the lack of such equivalency.

It is well settled that it is not sufficient to establish equivalency merely that the same general overall result is obtained through the process of the charged infringer as is obtained through the process of the patent. *U. S. Rubber Co. v. General Tire & Rubber Co.*, 128 F. 2d 104 (6 Cir.). If this were true, the first in the art to attain a result would foreclose all others from reaching the same result no matter what manner or means of attaining the result were used. On the contrary, the doctrine of equivalents insists that the particular element or step of the alleged infringer must perform the same or substantially the same function as the step or element to which it must respond in the patent and must perform this function in the same or substantially the same way. *Leishman v. Associated Wholesale Electric Co.*, 137 F. 2d 722 (9 Cir.).

III.

No Scintilla of Proof Exists That Appellant's Slow Freezing Either Accomplishes the Result of the Quick or Instantaneous Freezing of the Patent, or Accomplishes Said Result in the Same or Substantially the Same Way; on the Contrary, the Evidence Shows the Appellant's Slow Freezing Does Not Produce the Result Taught in the Reichel Patent.

Assuming, therefore, *arguendo* that appellees are entitled to invoke the doctrine of equivalents to expand the scope of their patent beyond its literal language, the question becomes, have appellees, as plaintiffs in the instant case, proven that appellant's slow freezing accomplishes the same or substantially the same result in the same or substantially the same way as does the quick or substantially instantaneous freezing of the patent? Appellant submits that they have not.

The function and mode of operation of quick or instantaneous freezing in the freeze drying process is discussed in this case in five places. It is discussed in the patent description itself; in the testimony of appellees' witness, Dr. Leake; in the testimony of the patentee himself, Reichel; in the testimony of appellant's witness, Dr. Hildebrand; and in the patent file wrapper.

As to the result, the patent states on page 2, column 1, lines 52 to 72:

"As a result of this treatment of the serum or similar biological product there are avoided or prevented any apparent physical or biological changes in the substance which is instantaneously frozen and lyophilized while maintained in its frozen state, and

as a result there is obtained a final product which has not been deteriorated by treatment in a liquid state while the water is being removed therefrom. By transforming the liquid substance quickly and completely into a frozen solid state, the component parts of the colloidal system are permanently fixed and changes are prevented in the chemical equilibrium such as would occur at the surface in the dehydration of a liquid product, and such as frequently results in the formation of polymers or anhydrides of the protein or other constituents. It is well known that when such surface films occur, in the evaporation of aqueous materials, such as sera, they possess different properties from the rest of the proteins as is shown by their marked insolubility.”

Thus, the patent teaches that the function of the instantaneous freezing step of the patented process is to transform the liquid substance quickly and completely into a frozen solid state, whereby to permanently fix the component parts of the colloidal system and prevent changes in the chemical equilibrium of the substance which frequently result in the formation of polymers or anhydrides of the protein or other constituents.

One may subject the record in this case to a fine-screening and yet find no evidence whatsoever that this is the function of appellant's slow freezing. While Dr. Leake, appellees' own witness, only had to say that he did not think instantaneous freezing was an essential feature of the Reichel process, a legally erroneous conclusion, Reichel, the patentee, testified that

“the reason for instantaneous or quick freezing of a biologically active substance is so that the water con-

tent will not be separated into large crystals which might rupture the biological cells or the other cells of the material.” [R. 197.]

He further testified:

“Q. And if the ice crystals are minute then they do not interfere with the protein structure? A. When the ice crystals are small and obtained by freezing at this low temperature then the water can be sublimed from the material without damaging the biological activity of the material.” [R. 197.]

and later he testified:

“If you remember our statements about large ice crystals and small ice crystals, where it is pointed out that small ice crystals are the desirable size. In order to obtain small ice crystals you have got to freeze instantaneously, in accordance with these specifications. If you do not you get large crystals and you do not freeze in accordance with the specifications.” [R. 200.]

Dr. Reichel’s testimony explaining the function and mode of operation of instantaneous freezing as producing the result specified in the patent specifications, is fully confirmed by the testimony of Dr. Hildebrand. Dr. Hildebrand testified:

“Q. Using those terms relatively, what occurs in a very low temperature or rapid freezing, and I mean by rapid freezing the rate of freezing? Just briefly tell us what is the rate of freezing and what could

occur at a very fast rate as compared with the very slow rate of freezing of a material? A. The more rapid the rate, other things being equal, the smaller will be the crystals, because you don't give time for the crystals already formed to grow bigger, but you start new crystals everywhere. That rate will be also influenced by the dissolved material. The size of the crystals will be influenced by the dissolved material also. . . .” [R. 287-288.]

And the file wrapper offers further evidence of what was meant to be accomplished by Reichel's step of rapid or instantaneous freezing. Reichel's affidavit of May 1, 1936, offered during the prosecution of his patent application states:

“1. The serum frozen at -20°C . appeared to have lamellae or fissures radiating from the center on the surface, and when cut longitudinally showed a fibrous structure. The fibres were loosely held together and offered little resistance to compression. The color of the material was slightly yellow. The material frozen at -74°C . had a smooth surface, with no fissures or lamellae, and was whitish-grey in color. In sections, the material was similar in appearance to that of the other products, except that the fibres were more compact and offered more resistance to compression. I am attaching hereto, marked Exhibit B, three comparative photo-micrographs showing the micro-structure of the two samples of material. In these photo-micrographs, the portions marked in ink (A) are of the material frozen at -20°C .,

and the portions marked in ink (B) are of the material frozen at -74°C . The magnification used in obtaining these pictures was 100 X. From these comparative pictures, it is clear that the material frozen at -74°C . has a much finer grain, with finer interstices, than the material frozen at -20°C . The reason for this is that the sample frozen at -20°C . was slowly frozen, with the formation of relatively large ice crystals, whereas the sample frozen at -74°C . was quickly frozen, with the formation of small ice crystals, and with the components of the serum uniformly distributed throughout the mass of the serum and with the colloidal equilibrium undisturbed. The freezing at drastically low temperatures, such as -74°C ., fixes the component parts of the serum and prevents denaturation and changes in the physical properties of the serum, due to separation and segregation of the water as large ice crystals." [R. 463-464.]

The face of the Reichel patent, therefore, and all the pertinent evidence in this case shows one thing, and one thing conclusively. The function of the quick or instantaneous freezing step in the Reichel process was not merely to get the substance frozen in the first instance, so that it could be subjected to the remainder of the Reichel process; it was to freeze the substance in such manner that large ice crystals would not be formed which might destroy the structure of the biological substance and thus injure its properties. Yet not one iota of evidence exists in the instant case either that appellant's slow

freezing accomplishes the result of the quick or instantaneous freezing of the patent, or even is desired to accomplish that result. And not one iota of evidence exists in the instant case that appellant's slow freezing produces those small ice crystals which accomplish this result. All that can be said for appellant's slow freezing is that it may be presumed to produce precisely those results objected to by Reichel and criticized in his affidavit [R. 463], and, further, that appellant's slow freezing is not the process of Reichel [R. 211].

It is, therefore, evident that even could the Reichel disclosure be considered to furnish a basis for a broadening of the Reichel claims beyond their literal language through resort to the doctrine of equivalents, the existence of equivalency between the Reichel quick or instantaneous freezing and appellant's slow freezing is nowhere shown in this record and, indeed is shown to be lacking by the positive evidence furnished by the patentee himself by deposition and through affidavit. It is therefore submitted that this Court's conclusion that appellant's freezing step is the equivalent of that of the patent is plainly erroneous.

IV.

The Holding of This Court That the Validity of Claims 4 and 5 of the Flosdorf, et al. Patent Lies in the Fact of Combination, Rather Than the Novelty of Any Particular Element, Still Compels the Conclusion That Said Claims Are Invalid as Failing to Claim the Combination and Instead Claim the Result or Function of Said Combination.

In its opinion sustaining the validity of the Flosdorf, et al. patent, this Court proceeds on the theory that the validity of claims 4 and 5 therein lies "in the fact of combination rather than the novelty of any particular element," stating that the invention was the combination of well-known types of pumps and ejectors with the well-known freeze drying process, this combination being founded on the patentees' discovery that it was possible to desiccate frozen biological material at a much lower degree of vacuum if the vapor were pumped out directly. In this the Court observes that appellant has misconstrued the nature of the invention, and that appellant has urged that the invention of the patent lay in new types of pumps.

It is submitted that such was not the contention of appellant but, on the contrary, it has been appellant's position that if Flosdorf, et al. invented a new combination of apparatus, their patent should have claimed this new combination rather than claim the result which this new combination effected.

The most liberal construction of the invention of Flosdorf, et al. cannot lead to the conclusion that their invention lay in the omission of the use in the freeze drying

process of desiccants or condensers. Such omission would have accomplished nothing whatsoever, other than to leave the water vapor free throughout the apparatus either to hinder the sublimation of ice from the subliming biological substance or to be drawn into the pumps then used. Yet this is the only language in claims 4 and 5 of the patent which in any way distinguishes the claimed process from that which had gone before.

Whether the patentees have discovered the feasibility of using lower vacuums if the water vapor be pumped out directly from the desiccating chamber, or not, the fact remains that the patentees' invention lay only in the discovery of means whereby the freeze drying process could be operated at this low vacuum, such means consisting in a combination with the old freeze drying apparatus of suitable pumps immune to vapor deterioration. Whether such pumps had to be designed by the patentees, or whether such pumps were old, is immaterial to the question here involved. Having invented the combination as this Court has held *Flosdorf, et al.* did, it was the patentees' duty to "particularly point out and distinctly claim the part, improvement, or combination" which they claimed as their invention or discovery [R. S. §4888, 35 U. S. C. §33]. This the patentees did not do. Instead, the patentees distinguished from the prior art only by a statement which completely forecloses further advancement in the art as regards any new and inventive combinations of apparatus which might avoid the admittedly undesirable use of chemical desiccants and condensers. It is appellant's position that this is precisely that which is condemned in the cases cited in appellant's briefs prior to the hearing in

this case, and that it is precisely this fact which renders this case controlled by the previous case in the Ninth Circuit, *United States Consol. Seeded Raisin Co. v. Selma Fruit Co.*, 195 Fed. 264 (9 Cir.).

As appellant has stated, the fact, if it be true, that the root of the Flosdorf, *et al.* invention was the discovery that it was possible to desiccate frozen biological material at a much lower degree of vacuum if the vapor were pumped out directly, makes no difference to the patentees' failure to claim their combination rather than a result of their combination. Indeed, if the patentees were entitled to claim their combination in terms of process, which appellant contends they were not, such process should have been claimed as including the step of pumping the water vapor out directly, since the Court has decided that it is this which permits the lower degree of vacuum. But if such lower vacuum does have pertinency to the validity of the Flosdorf, *et al.* patent, this Court will note that the statement of the patentees at page 1, col. 2, lines 31-36, of the patent that—

“In prior processes, it has been necessary to use very high vacuums, such as pressures of the order of 0.001 mm. (all pressures are given in millimeters of mercury), but we use pressures of a higher order, such as pressures up to $4\frac{1}{2}$ mm.”

is shown as erroneous by the record in this case. Appellant's Exhibit F-5 [R. 533] shows that Shackell set 3 mm. as the upper pressure limit for his freeze drying of biological substances [R. 542]. Appellant's Exhibit F-7 [R. 544] shows that Hammer used a pressure of 18 mm. to freeze dry biological substances [R. 546], and Appel-

lant's Exhibit F-10 shows that Karsner and Collins taught a pressure of 15-40 mm. in experimenting with Shackell's process [R. 576]. Shackell, Hammer, and Karsner and Collins all used chemical desiccants. It cannot, therefore, be accurately said that the Flosdorf, *et al.* invention rests upon the discovery that higher pressures are permissible because of pumping the water vapor directly from the freeze drying chamber. Such higher pressures were used long prior to Flosdorf, *et al.* by workers in the art who did not dispense with chemical desiccants. The simple fact is that Flosdorf, *et al.* conceived the idea of using a combination of the pumps disclosed in their patent with freeze drying apparatus and were thus able to avoid having to use chemical desiccants and condensers, the disadvantages of which are set out in their patent. Having by their new combination achieved this ability to do without the said chemical desiccants and condensers, the patentees were not content to claim their new combination as required by the statute, but rather claimed the very result which they had attained. It is submitted that such claiming is contrary to the law and that claims 4 and 5 of the Flosdorf, *et al.* patent are therefore invalid.

Petitioner therefore respectfully requests it be granted a rehearing on these points.

Dated at Los Angeles, California, this 25th day of January, 1950.

Respectfully submitted,

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Certificate of Counsel.

I believe that the petition for rehearing is well founded, and I certify that it is not filed for purposes of delay.

Dated at Los Angeles, California, this 25th day of January, 1950.

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